



A STUDY OF PROLIFERATION OF DIGITAL LITERACY IN INDIAN HIGHER EDUCATION SECTOR

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ABSTRACT

The recent upsurge of digitization in education industry has totally changed the teaching-learning scenario in the whole world including India to a great extent. The boost of technology in the higher education arena has made imparting education convenient and stress-free for both students and educators. Business Schools across the globe are gradually implementing digital teaching solutions and tools as a gateway to make the classroom atmosphere more comprehensive and participatory. As students have to correlate their classroom learning with the practical and actual business world, the true revolution in education can only be achieved via digitization of education so that students can learn at their own pace both within and outside the classroom scenario. With the advent of introduction of many educational tools using digital technology and availability of new softwares, more than 100,000 schools and colleges in India have initiated the use of various dimensions of digital technology. The quality of higher education scenario in India today is highly influenced and simplified by the propagation of digital innovative tools and solutions of educational technological advancements. Cloud learning is starting to be looked at seriously by many educational institutions as a replacement or supplement to their traditional teaching practices. The use of internet, tablets, smartphones, personal computers, laptops and social media platforms and applications like Facebook and others have a far more enriching impact on proliferation and spread of digital education than one can imagine. The present paper seeks to evaluate the opportunities and accessibility of digital education in India and the potential bottlenecks involved with measures to overcome them.

KEYWORDS: Cloud learning, Digital, Digitization, Education, technology

INTRODUCTION

In India the use of IT based learning for promoting instruction and advancement has always been a part of policy and plan documents on education. The decision makers at both central and state are favoring inclusion of new digital and internet based learning tools in education including adoption of cloud based virtual classrooms/universities and e-Learning initiatives. The Government of India has instigated several national as well as state specific schemes that run parallel to large number of privately led digital initiatives at school and higher education levels. Accessibility of education and its quality upgradation are interdependent parameters of higher education. India being a country of the sub-continental size with a population above 1 billion, the quantitative expansion of education (i.e. accessibility dimension) is of paramount importance to mitigate disparities across regions, gender and social strata in the field of education. Along with the essential and unavoidable assessable expansion of higher education, it is equally imperative to expand the quality of higher education. The digital learning market is undergoing a swift expansion in India with a large number of start-ups entering this segment. India's digital knowledge market is presently estimated at US\$ 2bn in 2016, growing at a CAGR of 30% and is expected to reach US\$ 5.7bn by 2020. The increasing internet penetration, time constraint faced by the aspirants, geographical challenges in attending physical classes, and the low expense in the online training are the primary drivers of the digital learning sector. These parameters act as promoters to further swell the spread of the digital learning. Cloud learning is preliminary looked at earnestly by many educational establishments as a standby or addition to their traditional teaching methodologies. One of the key motive is as a means of decreasing costly IT costs while providing a service that is easily reachable from any kind of device. Another benefit of Cloud learning is that it permits for context-based communication and association instead of a typical point-to-point communication exercise that is used in customary practices. The current global market for e-learning, including both self-paced eLearning and the live online learning, has reached US \$107 billion and is expected to grow at a CAGR of 18% over the next 5 years. Currently, the US and Western European markets have the biggest instances of eLearning adoption, ranging from K-12 solutions to business-related training, with North America being the most dominant market for eLearning in the world. It contributes the highest revenues in the industry.

OBJECTIVES OF THE STUDY

1. To understand the evolution of digital education in India and the various opportunities available.
2. To find out the factors that helps in enhancing the accessibility of digital education in India along with the challenges involved.

MATERIALS AND METHODS

In this paper, the research was based on both primary and secondary data sources. Primary data was gathered through personal interview of both users and providers of digital technology including learners and institutions. The secondary data was taken from publications of government of India including official research reports and papers on higher education and other agencies.

DISCUSSION AND ANALYSIS

The paper has been suitably categorized in two Sections: viz., Section I: *Evolution and background of Digital education in India*. Section II: *Prevalent Business Models imparting Digital Education in India* and Section III: *Opportunities and Potential bottlenecks involved in adoption and penetration of digital education*

SECTION I: Evolution and background of Digital education in India

Traditionally, the Indian education system evolved from the 'Gurukul' tradition. As time passed by, certain cities such as Varanasi in Uttar Pradesh, Kanchipuram in Tamil Nadu etc. evolved as learning hubs, with famous learning centres. By the end of the British era, this tradition had been rendered almost entirely redundant, with formal schooling taking its place. A revolution is taking place in the education system. As a result, a new phase of education has emerged i.e. "e-Learning". eLearning refers to innovative use of technology in exchanging ideas and providing access to more people. The main aim of online education is to facilitate learning and improve performance by creating, using, and managing appropriate technological processes and resources. The digital learning market in India can be categorized from the 'provider side' and the 'user side'. The providerside consists of companies offering Learning Management Systems (LMS) for content and assessmentsolutions. The user side consists of K-12 segment, Higher Education, Professional Courses, Skill Development, Language Training, Test Prep and MOOCs. Digital learning in the K-12 space comprises segments such as Smart Class solutions, Online Tutoring, Online Preparation for Exams, Simulation and Virtual Reality, STEM Learning, AR and Robotics, and Assessment. Sub-segments like Simulation, STEM and Augmented Reality, Tablet Learning, and Online Tutoring are at an early stage of adoption but demonstrate a massive potential.

Section II: Prevalent Business Models imparting Digital Education in INDIA

Massive Open Online Courses (MOOCs) introduced in 2012 have revolutionized online education, making elite education accessible and affordable to millions across the globe, and have received massive investment and support from corporates and from elite educational institutes such as Stanford, Harvard, and MIT. A MOOC is an online course aimed at unlimited participation and open access via the web. In addition to traditional course materials such as filmed lectures, readings, and problem sets. Khan Academy was established in 2006, provides micro-lectures (largely focusing on K12 topics) on public platforms like YouTube, and makes these lectures, exercises, and resources free to learners and instructors around the world. Short term, outcome based training model works extensively for working professionals who cannot afford to carve out time separately to attend trainings and up skill giving up their jobs. The training methodology involves outcome based learning which results in career advancement of its learners delivered through promotions, pay raises or better quality of work. The Tablet Learning Solution industry offers multiple benefits over book learning by enabling the delivery of textbooks in an enriched manner. Edutor, Sharpedge Learning, Class teacher Learning Solutions, Prazas Learning (Tabtor), Iprof, Robomate (MT Educare) and Penta T-Pad are some of the key players in the tablet learning solutions industry. Open and Distance Learning Universities and Institutes like IGNOU (Indira Gandhi National Open University) offers the large-

est number of certificate courses at affordable rates. NIIT Limited offers learning management and training delivery solutions to corporations, institutions, and individuals in 40 countries. Educomp is the largest Education Company in India and has reached over 30 million learners and educators across 65,000 schools since 1994. Intellipaat, started in 2011, provides online training to IT professionals through corporate training and self-paced courses. Learn Social works on an aggregator model and offers live instructor-led online courses on a wide range of topics including technology, languages, business management, robotics, arts such as music, editing, and many others.

Section III: Opportunities and Potential bottlenecks involved in adoption and penetration of digital education

Some of the digital opportunities widely available are:

Digitization of Books (E-Text Books)

There is an increased trend towards creation of a digital repository of books to create a digital learning environment for students. The digital version of the books embedded with text, pictures along with video, simulations and visualizations help students learn the concepts in an interactive way.

Virtual Technical University

The National mission on Education through ICT is working on a war foot to establish a virtual technical university to impart training to UG/PG students along with new teachers.

Mobility

Adoption of the BlackBerry, iPhone and other smart devices that have Internet access allows students and faculty to perform a wide range of assignments. A combination of Web 2.0 tools viz., Blogs, Wikis, Podcasts, Mashups, and Social Networking Communities are transforming the traditional learning environment into something more social and personalized.

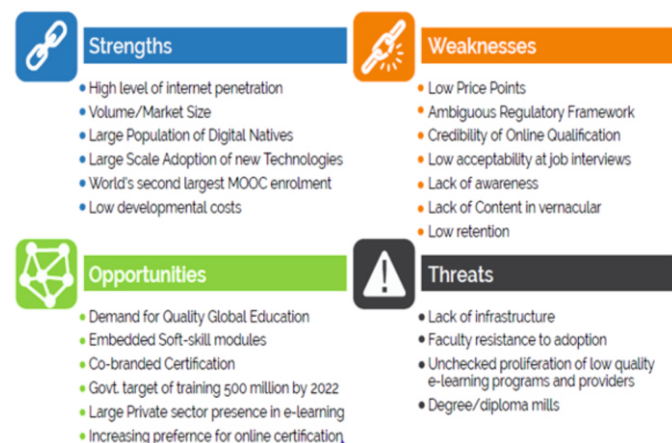
Gamification of learning and training:

Gamification applies game design techniques and mechanics to digital learning courses. These strategies can help organisations motivate reluctant workers and increase learner engagement and achievements.

Simulation and Virtual Reality in Education

With a share of 0.25%, the Simulation learning market in India is estimated to be US \$13 mn in FY 2015. It is expected to grow at a CAGR of 100% over the next 4-5 years. A SWOT analysis of Digital education scenario is presented in Exhibit I below:

Exhibit I: Opportunities & Challenges for digital learning Service Providers



Source: CII National Committee on Education report

IT/ICT Adoption– Challenges

There is significant disparity in ICT usage between institutions in urban areas and those in semi-urban/rural parts of the country. The quality of ICT infrastructure and its use is limited in a large percentage of Autonomous/Affiliated Colleges especially due to lack of trained IT staff, connectivity issues and shortage of funds. The rapid increase in mobile penetration and evolution of 4G wireless technologies such as WiMax/LTE it is expected that broadband connectivity issues can be resolved by the end of the 12th five-year-plan (2012-2017) in semi-urban/rural parts of the country. The other key challenges affecting the utilization of IT/ICT in Indian Higher Education are lack of required Knowledge and Technology readiness, Implementation challenges that have contributed to the failure of past initiatives, Linguistic barriers to dissemination of knowledge and Penetration of ICT systems in higher education institutions is extremely poor.

Conclusion

While there are positive trends regarding the adoption of digital learning in Pan-

India, poor internet connectivity in smaller towns and semi-urban areas forms the primary impediment towards widespread adoption of this technology-driven learning. The massive potential of learning tools such as gamification, video based learning, competency training, etc. can only be realised once these issues are circumvented. It can be concluded that in the coming decade, the innovative use of IT/ICT is believed to be a game changer that can significantly strengthen India's higher education system and propel the country into becoming a "Knowledge Superpower". The cloud based virtual solutions promises to improve Access, Equity and Quality of Higher Education.

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